

REVISION OF GENUS *Ferna* MALAISE (HYMENOPTERA : TENTHREDINIDAE : ALLANTINAE) FROM INDIA¹

MALKIAT S. SAINI AND JAGDEEP S. DEEP²
(With twenty text-figures)

Key words: *Ferna bengalensis*, *F. punctifossa*, *F. longiserra*, *F. breviginata*.

The genus *Ferna* Malaise in India has been revised. To the previously recorded single species, another is added while two others, *F. punctifossa* and *F. longiserra*, represent first records. A new species, *F. bengalensis*, is described and illustrated. A workable dichotomous key for the known species is given.

INTRODUCTION

The genus *Ferna* described by Malaise in 1961 is so far represented by six species. Prior to 1983, when Muche reported *F. breviginata* from Darjeeling (India), it was confined to Burma. In this report *F. punctifossa* and *F. longiserra* represent first records from India and *F. bengalensis* is new to science. For confirmation and comparison the concerned types of *Ferna* were procured on loan from N.R. Stockholm. This genus is characterised by the body being pale yellow below and black above and black with rich pale markings and yellow with black ones. Mandibles sub-symmetric, each with more or less blunt subapical tooth. Anal cell cross vein meets brachium at 60°-40° and hind wings have one closed middle cell.

Abbreviations used: EL – eye length, LID – lower interocular distance, IDMO – interocular distance at level of median ocellus, OOL – oculo-ocellar line, OCL – ocello-occipital line, POL – postocellar line, IATS – inner apical tibial spur, OATS – outer apical tibial spur, MB – metabasitarsus, ICD – inter cenchri distance, ITD – inter tarsal distance.

KEY TO THE INDIAN SPECIES OF *Ferna* MALAISE

1. Mesoscutellum with a faint longitudinal carina in posterior half; median fovea in form of a long depression touching median ocellus, deeper in anterior half

-*Ferna breviginata* Malaise, 1961
- Mesoscutellum not carinated; median fovea not reaching median ocellus. 2
- 2. Circum-, inter-, postocellar and lateral furrows indistinct; median fovea in form of a shallow depression*Ferna bengalensis* sp. nov.
- Circum-, interocellar and lateral furrows distinct; median fovea in form of a deep ditch 3
- 3. Postocellar furrow indistinct; lateral furrows triangularly widened into a punctiform pit just behind each lateral ocellus; metabasitarsus and following joints combined in ratio 5 : 6
.....*Ferna punctifossa* Malaise, 1961
- Postocellar furrow distinct; lateral furrows deep, sunken, excurved, not reaching hind margin of head; metabasitarsus and following joints combined in ratio 5 : 7*Ferna longiserra* Malaise, 1961

Ferna breviginata Malaise, 1961 (Figs. 2, 4, 11, 17)

Ferna breviginata Malaise, 1961. Ent. Tidskr. Arg. 82, Hafte 3-4, p. 258.

FEMALE: Average length 6.5 mm. Body black. Clypeus, labrum, mandible barring apex, supraclypeal area, broad stripe along inner orbit, malar space, broad stripe along hind orbit reaching temple, anterolateral, posterior and posterodorsal margin of pronotum; tegula; spot on anterior slope of mesoscutellum, spot on mesepisternum, metepisternum, meso- and metasterna; all legs; narrow posterior margin of terga 2-7 and deflexed part of terga; all sterna; are pale yellow. Wings hyaline, costa and stigma fulvous, venation brown.

Antenna 9-segmented, 2.9 x head width,

¹Accepted October 1990.

²Dept. of Zoology, Punjabi University, Patiala 147 002.

scape and pedicel longer than broad, segments 3 and 4 in ratio 6:7, segments 6-9 subequal in length. Clypeus (Fig. 4) roundly to subsquarely incised up to half of its medial length with broad rounded lateral teeth; labrum broader than long in ratio 3:2 with deflexed rounded anterior margin; malar space 1.1 x diameter of median ocellus; lower margin of eye slightly below level of antennal socket; LID:IDMO:EL = 2.0:2.2:1.2; head without postgenal carina; supraclypeal and supra-antennal pits well marked; frontal area elevated much above level of eyes; antennal furrows shallow, distinct in anterior half only; median fovea in form of a long depression, deeper in anterior half; circum-, inter- and postocellar furrows distinct; lateral furrows deep, falling short of hind margin of head; postocellar area broader than long in ratio 7 : 4; head slightly narrowing behind eyes, OOL:POL:OCL = 2.0:1.0:1.8; mesoscutellum hardly elevated with a faint indication of a longitudinal carina in posterior half; appendage not carinate; ICD:ITD = 1.0:4.0; mesepisternum roundly raised without carina or acute apex; tarsal claw (Fig. 2) with a long apical and slightly shorter subapical teeth, basal lobe absent; metabasitarsus shorter than following tarsal joints combined in ratio 4:5; IATS:MB:OATS = 2.0:5.0:1.7.

Head and mesonotum minutely and densely punctured; mesoscutellum punctured like head on anterior slope, with large pictures on posterior slope; appendage impunctate; mesopleuron, sternum and abdomen shining with minute scattered punctures.

Lancet (Fig. 17) having about 15 serrulae. Each serrula is shallow with 9-10 anterior and 4-5 posterior sub-basal teeth. Hypopygium as in Fig. 11.

MALE: Not found.

Population variation: Not observed.

Holotype depository: Female, NR, Stockholm.

Paratypes: four females, seven males, NR, Stockholm.

Specimens examined: 9 females, Himachal Pradesh: Dalhousie, Kalatop – 2880 m, 29 June

to 1 July 1986.

Distribution: Burma. INDIA: West Bengal, Himachal Pradesh.

The specimens examined agree with Malaise's (1961) key for species of *Ferna* and resemble well the original description. This species is characterised by mesoscutellum with a faint longitudinal carina in the posterior half and median fovea touching median ocellus in the form of a long depression. The species was originally described by Malaise from Burma but later on Muche (1983) reported it from Darjeeling.

Ferna bengalensis sp. nov.

(Figs. 1, 3, 10, 18)

FEMALE: Average length 6.5 mm. Body black. Clypeus; labrum; mandible barring apex; supraclypeal area up to supra-antennal tubercle; malar space; broad stripe along inner orbit; hind orbit continuing as a stripe on temple; narrow margin of pronotum; tegula; spot on anterior slope of mesoscutellum; lower half of mesepisternum except broad anterodorsal angle; mesosternum; all legs (tarsi infumated towards tip); all sterna, deflexed parts of terga; tergum 9; are yellowish white. Wings hyaline, costa and stigma fulvous, venation dark brown.

Antenna 9-segmented, 2.8 x head width, scape and pedicel longer than broad, segment 3 indistinctly shorter than 4, segments 6-9 subequal in length; clypeus (Fig. 3) roundly narrowly incised up to one-third of its medial length with broad and rounded lateral teeth; labrum broader than long in ratio 5:3 with deflexed rounded anterior margin; malar space 1 x diameter of median ocellus; lower margin of eye below level of antennal socket; LID:IDMO:EL = 2.0:2.0:1.0; head without postgenal carina; supraclypeal and supra-antennal pits well marked; frontal area roundly elevated above level of eyes; antennal furrows well marked; median fovea in form of a shallow depression. Circum-, inter- and postocellar furrows indistinct; lateral furrows not well marked; postocellar area almost flat,

broader than long in ratio 3:2; head slightly narrowing behind eyes; OOL:POL:OCL = 2.0:1.0:1.7; mesoscutellum slightly elevated; appendage not carinate; ICD:ITD = 1.0:4.0; mesepisternum roundly raised without carina or acute apex; tarsal claw (Fig. 1) with a long apical and short subapical teeth, basal lobe absent; metabasitarsus shorter than following tarsal joints combined in ratio 5:6; IATS:MB:OATS = 1.8:5.0:1.5.

Head, mesonotum and mesoscutellum minutely punctured (interocellar area with distinct punctures); appendage polished; mesepisternum and sternum shining with indistinct scattered punctures; abdomen impunctate.

Lancet (Fig. 18) having 14-15 serrulae. Each serrula is triangular with 7 anterior and 3-4 posterior sub-basal teeth.

Hypopygium as in Fig. 10.

MALE: Not found.

Population variation: Single specimen examined.

Holotype: Female, West Bengal, Darjeeling, 2800 m, 2 May 1986.

Paratype: Nil.

Distribution: INDIA: West Bengal.

The species can be distinguished from *F. punctifossa* keyed out at couplet 2 (Malaise 1961) in having lateral furrows indistinct (distinct in *F. punctifossa*), postocellar area broader than long in ratio 3:2 (little broader than long in *F. punctifossa*) and median fovea in the form of a continuous shallow depression (almost flat before median ocellus in *F. punctifossa*). The species is characterised by having circum-, inter- and postocellar furrows indistinct.

Etymology: The species has been named after the state in which its type locality is situated.

Ferna punctifossa Malaise, 1961

(Figs. 6, 8, 9, 13, 16, 19)

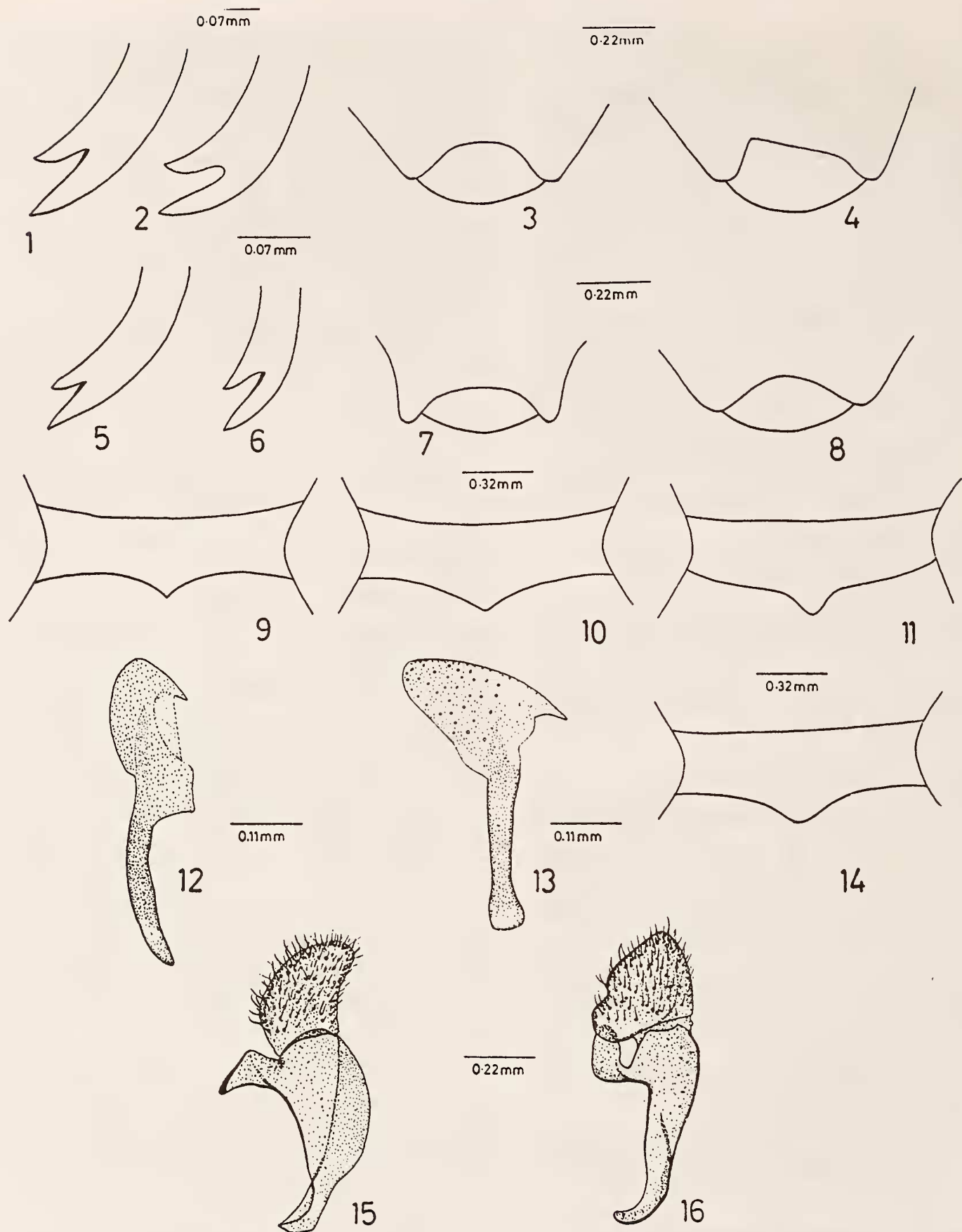
Ferna punctifossa Malaise, 1961, Ent. Tidshr. Arg. 82, Hafte 3-4, p. 259.

FEMALE: Average length 5.5 mm. Body black. Clypeus; labrum; mandible barring apex;

supraclypeal area; broad stripe along inner orbit; malar space; hind orbit continuing as transverse spot up to temple; tegula; broad medial spot on anterior slope of mesoscutellum; spot on mesepisternum continuing with entirely yellow mesosternum; all legs, deflexed sides of all terga; tergum 9; sternum entirely; are yellowish. Wings hyaline, costa and stigma fulvous, venation brown.

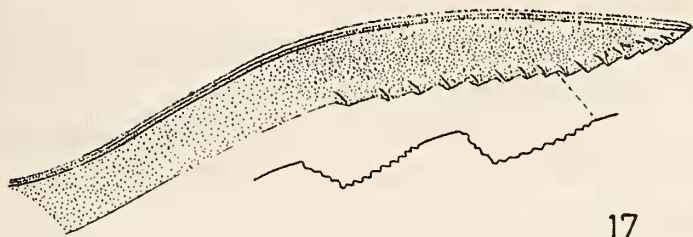
Antenna 9-segmented, 3.0 x head width, scape and pedicel longer than broad, segments 3 and 4 in ratio 6:7, segments 7-9 subequal in length; clypeus (Fig. 8) roundly incised up to two-fifths of its medial length with broad, rounded lateral teeth; labrum broader than long in ratio 5 : 3 with deflexed rounded anterior margin; malar space 1 x diameter of median ocellus; lower margin of eye below level of antennal socket; LID:IDMO:EL = 2.0:2.1:1.0; head without postgenal carina; supraclypeal and supra-antennal pits well marked; frontal area roundly elevated above level of eyes; antennal furrows well marked; median fovea in form of a deep ditch in anterior half only; circumocellar furrow distinct; interocellar furrow broad and deep; postocellar furrow indistinct; lateral furrows triangularly widened into a punctiform pit just behind each lateral ocellus, not reaching hind margin of head; postocellar area slightly elevated, broader than long in ratio 6:5; head slightly narrowing behind eyes; OOL:POL:OCL = 2.2:1.0:2.0; mesoscutellum somewhat roundly elevated; appendage not carinate; ICD:ITD = 1.0:4.0; mesepisternum roundly raised without carina or acute apex; tarsal claw (Fig. 6) with long apical and short subapical teeth, basal lobe absent; metabasitarsus shorter than following tarsal joints combined in ratio 5:6; IATS:MB:OATS = 2.0:5.0:1.7.

Head minutely and densely punctured; mesonotum subshining with minute scattered punctures; mesoscutellum punctured like head; appendage impunctate; mesopleuron and mesosternum shining with minute punctures; abdomen impunctate.

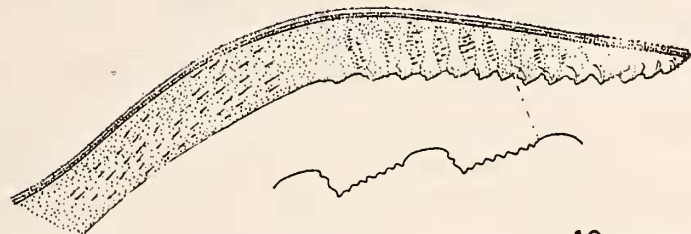


Figs. 1-16. Species of the genus *Ferna* Malaise

1. Tarsal claw of *bengalensis*; 2. Tarsal claw of *brevigenata*; 3. Clypeus and labrum of *bengalensis*; 4. Clypeus and labrum of *brevigenata*; 5. Tarsal claw of *longiserra*; 6. Tarsal claw of *punctifossa*; 7. Clypeus and labrum of *longiserra*; 8. Clypeus and labrum of *punctifossa*; 9. Hypopygium of *punctifossa*; 10. Hypopygium of *bengalensis*; 11. Hypopygium of *brevigenata*; 12. Penis valve of *longiserra*; 13. Penis valve of *punctifossa*; 14. Hypopygium of *longiserra*; 15. Gonoforceps of *longiserra*; 16. Gonoforceps of *punctifossa*.



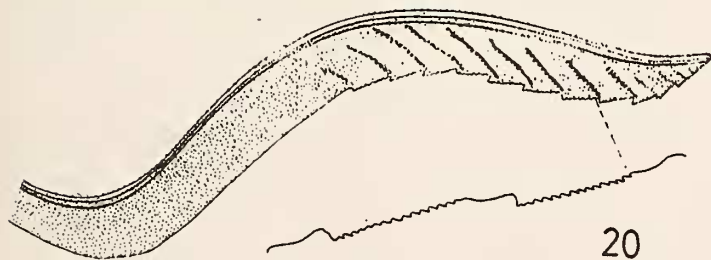
17



18



19



20

Figs. 17-20. Species of the genus *Ferna* Malaise
 17. Lancet of *brevigenata*; 18. Lancet of *bengalensis*;
 19. Lancet of *punctifossa*; 20. Lancet of *longiserra*.

Lancet (Fig. 19) having about 16 serrulae. Each serrula is shallow with seven anterior and 2-3 posterior sub-basal teeth.

Hypopygium as in Fig. 9.

MALE: Average length 5.0 mm. Similar to female.

Male genitalia: Penis valve as in Fig. 13, gonoforceps as in Fig. 16.

Population variation: Fulvous colour is pale yellow in the population.

Holotype depository: Female, NR, Stockholm.

Paratypes: four females, two males, NR, Stockholm

Specimens examined: 6 females, 20 males, West Bengal: Darjeeling, 2880 m, 2 May to 4 May 1986. 4 males, Arunachal Pradesh: Bomdila, 2800 m, 1 June to 2 June 1989. 13 females, 9 males, Himachal Pradesh: Dalhousie, Kalatop, 2800 m, 28 June to 2 July 1986.

Paratype (female) bearing slips, "Kambatti 2135 m, N.E. Burma, 9/6, R. Malaise, 24/90".

Distribution: Burma. INDIA: West Bengal, Arunachal Pradesh and Himachal Pradesh.

The specimens agree with Malaise's (1961) key for *Ferna* and comply well with the original description and the paratypes received on loan from NR, Stockholm. The species is characterised by the lateral furrows widened triangularly into punctiform pits just behind lateral ocellus. This is a first report of the species from India.

Ferna longiserra Malaise, 1961

(Figs. 5, 7, 12, 14, 15, 20)

Ferna longiserra Malaise, 1961. Ent. Tidskr. Arg. 82, Hafte 3-4, p. 260.

FEMALE: Average length 6.0 mm. Body black. Clypeus; labrum; mandible barring apex; supra-clypeal area; spot on supra-antennal tubercles; malar space, continuing as a stripe along inner orbits; narrow transverse spot on temple; narrow margin of pronotum; tegula; broad transverse spot on mesepisternum along

its border with sternum; all legs (tarsi somewhat fulvous); very narrow hind margin of terga, deflexed sides of terga and all sterna; are cadmium yellow. Wings smoky hyaline; costa, stigma and venation black.

Antenna 9-segmented, 2.7 x head width, scape and pedicel longer than broad, scape distinctly so, segments 3-4 subequal, segments 6-8 subequal in length, 9th slightly shorter, clypeus (Fig. 7) roundly incised up to half of its medial length with broad, lateral teeth; labrum broader than long in ratio 5:3 with deflexed, rounded anterior margin; malar space 1 x diameter of median ocellus; lower margin of eye just below level of antennal socket; LID:IDMO:EL = 2.0:2.1:1.4; head without postgenal carina; supraclypeal and supra-antennal pits well marked; frontal area roundly elevated above level of eyes; antennal furrows deep, well marked; median fovea in form of a deep ditch not reaching median ocellus; circum-, inter- and postocellar furrows sharp, lateral furrows deep, sunken, excurved, not reaching hind margin of head; postocellar area slightly elevated, broader than long in ratio 2:1.1; head narrowing behind eyes; OOL:POL:OCL = 1.8:1.0:1.2; mesoscutellum flat; appendage not carinate; ICD:ITD = 1.0:4.0; mesepisternum roundly raised without carina or acute apex; tarsal claw (Fig. 5) with a long apical and short subapical teeth, basal lobe absent; metabasitarsus shorter than following tarsal joints combined in ratio 5 : 7; IAITs : MB

: OATS = 2.0 : 5.0 : 1.5.

Head and thorax shining with few scattered punctures; abdomen impunctate.

Lancet (Fig. 20) having about 12 serrulae, each serrula with innumerable anterior and no posterior sub-basal teeth.

Hypopygium as in Fig. 14.

MALE: Average length 5.5 mm. Similar to female.

Male genitalia: Penis valve as in Fig. 12, gonoforceps as in Fig. 15.

Population variation: Not observed.

Holotype depository: Female, NR, Stockholm

Paratypes: 29 females, 6 males, NR, Stockholm.

Specimens examined: 4 females, 1 male, Arunachal Pradesh: Bomdila 2800 m 30 May to 1 June 1989.

Paratypes (female, male) bearing slips, "N.E. Burma, Kambatti 2135 m, 16/6 & 2/6 R. Malaise 22/90 & 23/190".

Distribution: Burma; INDIA: Arunachal Pradesh.

The specimens fit in Malaise's 1961 key for *Ferna* and comply well with the original description (in key) and paratypes (gift from NR, Stockholm). This species is characterised by the sawsheath being very long, and the lateral furrows, deep, sunken, excurved and not reaching hypothetical hind margin of head.

REFERENCES

- MALAISE, R. (1961): New Oriental Saw flies (Hym. Tenthredinidae). *Ent. Tidskr. Arg.* 82, H. 3-4: 231-260.
 MUCHE, W.H. (1983): Die von Herrn Dr. W. Wittmer in Indien und Bhutan gesammelten Blattwespen mit Be-

- schreibung von Sechs neuen Arten der Tenthredinidae (Hymenoptera : Symphyta) Reichenbachia. *Mus. Tierk. Dresden.* 21, Nr. 29: 167-180.